

REMARKS

This Amendment is in response to the Office Action mailed on July 12, 2004. In the Office Action, claims 1-2 and 5 were rejected and claims 3-4, 6-8 were objected to. With this Amendment, claim 1 is amended.

In section two of the Office Action, FIG. 1 was objected to. Accordingly, the Applicant has submitted a replacement sheet. It is respectfully submitted that the objection to FIG. 1 can be withdrawn.

In section five of the Office Action, claims 1 and 2 were rejected under 35 U.S.C. §103(a) as being unpatentable over Kim et al. in view of Brown et al. or Lee. It is respectfully submitted that the cited references fail to teach or suggest all the recited claim elements of claims 1 and 2.

On page three of the Office Action, the Examiner indicates that Kim et al. does not disclose taking into account external disturbances in addition to internal disturbances. However, the Examiner points to Brown et al. as disclosing external as well as internal disturbances to motor drives. The Examiner further points out that environmental factors in Brown et al. are identified and steps to contain these error sources are described. The Applicant respectfully disagrees.

Claim 1 recites "computing an external disturbance model" and "defining a state estimator based on the inertial matrix and external and internal disturbances". In one aspect, Kim et al. does not teach or suggest defining a state estimator based on external and internal disturbance models. Instead, Kim et al. teaches developing a two-mass system equation and applying a  $H^\infty$  control theory to the two-mass system. In another aspect, Brown et al. does not teach or suggest computing an external disturbance model nor defining a state estimator based on external and internal disturbance models. Instead Brown et al. merely identifies that external disturbances exist and that they

can be contained by placing a servowriter in a clean room free of dirt particles and magnetic particles as well as having controlled temperature and humidity. In still a further aspect, Lee does not teach or suggest computing an external disturbance model and defining a state estimator based on internal and external disturbance models. Instead, Lee teaches an adaptive tuning controller which effectively controls the presence of external disturbances.


It is respectfully submitted that claim 1 is allowable over the cited references. In addition, it is respectfully submitted that claim 2 is allowable over the cited references by virtue of its dependency on claim 1. Favorable action is requested.

In section six of the Office Action, claim 5 is rejected under 35 U.S.C. §103(a) as being unpatentable over Kim et al. in view of Brown et al. and further in view of Reif et al or Shah et al. It is respectfully submitted that claim 5 is allowable over the cited references by virtue of its dependency on an allowable base claim.

The Director is authorized to charge any fee deficiency required by this paper or credit any overpayment to Deposit Account No. 23-1123.

Respectfully submitted,

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